

**Appl. No.** : **09/584,656**  
**Filed** : **May 30, 2000**

### **LISTING OF THE CLAIMS**

1-52. (Cancelled).

53. (Previously Presented) A processing reactor for high temperature treatment of substrates, the reactor comprising:

a plurality of walls defining a chemical vapor deposition chamber, the walls comprising a gas inlet and a gas outlet, wherein the gas inlet is connected in gas communication with a chemical vapor deposition reactant gas source;

a substrate support structure within the chamber;

a heat exchange member;

a movable element; and

a drive mechanism for moving the movable element between a substrate treatment position within the chamber and a heat transport position within the chamber, the substrate treated at the substrate treatment position while seated upon the support structure within the chamber, the heat exchange member spaced from the substrate by between about 0.2 mm and 3.0 mm to enable conductive heat transport across a gap between the heat exchange member and the substrate in the heat transport position, the substrate being seated upon the support in each of the substrate treatment position and the heat transport position.

54. (Previously Presented) The reactor of Claim 53, wherein the movable element comprises the substrate support structure.

55. (Previously Presented) The reactor of Claim 54, wherein the heat exchange member comprises one of the plurality of walls defining the chamber.

56. (Withdrawn) The reactor of Claim 53, wherein the movable element comprises the heat exchange member.

57. (Withdrawn) The reactor of Claim 56, wherein the heat exchange member comprises a cooling plate and the plate is stored within an actively cooled pocket in the substrate treatment position.

58. (Withdrawn) The reactor of Claim 57, wherein the plate extends over the substrate upon the support structure in the heat transport position.

59. (Previously Presented) The reactor of Claim 53, wherein the distance is between about 0.5 and 1.5 mm.

60-64. (Cancelled).

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65. (Previously Presented) A cooling mechanism in a substrate processing system, the mechanism comprising:

a support structure supporting a substrate in a chemical vapor deposition process chamber during high temperature processing at a substrate processing position, wherein the chamber comprises a gas inlet and a gas outlet, wherein the gas inlet is connected in gas communication with a chemical vapor deposition reactant gas source; and

an actively cooled thermal exchange member,

wherein the support structure is movable between the substrate processing position and a cooling position, in which the substrate is supported upon the support structure between about 0.2 mm and 3 mm from the actively cooled thermal exchange member, and a substrate load position, in which a wafer handler can place the substrate upon the support structure, wherein the substrate processing position, the cooling position and the load position are within the chamber.

66. (Cancelled).

67. (Withdrawn) The cooling mechanism of Claim 65, wherein the thermal exchange member is translatable.

68. (Previously Presented) The cooling mechanism of Claim 65, wherein the support structure is translatable.

69. (Previously Presented) The cooling mechanism of Claim 68, wherein the support structure is vertically translatable.

70. (Cancelled).

71. (Previously Presented) The cooling mechanism of Claim 65, wherein the substrate is supported upon the support structure between about 0.5 mm and 1.5 mm from the cooling element in the cooling position.

72. (Previously Presented) A processing reactor for high temperature treatment of substrates, the reactor comprising:

a plurality of walls defining a chemical vapor deposition chamber;

a movable substrate support structure;

a heat source for heating a substrate upon the support structure within the chamber;

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a thermal exchange member, wherein the thermal exchange member comprises a wall substantially transparent to radiant heat; and

a drive mechanism capable of moving the support structure between a substrate treatment position and a heat exchange position,

wherein the support structure supports the substrate during substrate treatment within the chamber at the substrate treatment position, and wherein the support structure also supports the substrate at the thermal exchange position while the substrate is spaced from the thermal exchange member by between about 0.2 mm and 3.0 mm to enable conductive heat transport between the thermal exchange member and the substrate.

73. (Previously Presented) The processing reactor of Claim 72, wherein the distance is between about 0.5 and 1.5 mm

74. (Previously Presented) The processing reactor of Claim 72, wherein the thermal exchange member is positioned within the chamber.

75. (Previously Presented) The processing reactor of Claim 74, wherein the thermal exchange member is one of the plurality of walls defining the chamber.

76. (Previously Presented) The processing reactor of Claim 72, wherein the thermal exchange member is actively cooled.

77. (Withdrawn) The cooling mechanism of 65, wherein the cooling position and the substrate processing position are at substantially similar locations.